REMARKS/ARGUMENTS

Upon entry of this amendment, claims 1-13, 16-18, and 27-36 are pending in this application and are presented for examination. Claims 14-15 and 19-26 have been canceled without prejudice. Claims 1-13 and 16-18 have been withdrawn from consideration as being directed to non-elected inventions. Claims 27-36 are newly added, and are drawn to the elected invention. No new matter has been introduced with the foregoing amendments. Reconsideration is respectfully requested.

I. FORMALITIES

Support for new claims 27-36 is found throughout the specification as filed. A detailed description of the support for new claim 27 is provided below. Support for new claims 28-29 is found, for example, on page 10, lines 13-16. Support for new claim 30 is found, for example, on page 5, lines 4-7. Support for new claim 31 is found, for example, on page 34, lines 11-22. Support for new claim 32 is found, for example, on page 76, lines 4-6. Support for new claim 33 is found, for example, on page 31, lines 10-24. Support for new claim 34 is found, for example, on page 83, lines 15-17. Support for new claim 35 is found, for example, on page 83, lines 6-8. Support for new claim 36 is found, for example, on page 5, lines 30-33 and on page 28, lines 10-14. Thus, no new matter has been introduced. As such, Applicant respectfully requests that the new claims be entered.

II. REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 14-15 and 19-26 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing new matter and lacking sufficient written description. In particular, the Examiner alleges that claims 14-15 and 19-26 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that Applicant, at the time the application was filed, had possession of the claimed invention. In response, Applicant has canceled claims 14-15 and 19-26 without prejudice, thereby rendering this rejection moot. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

Newly added claim 27 recites an array for diagnosing inflammatory bowel disease (IBD) in a subject comprising nucleic acid probes for determining an expression level of at least one gene product in a sample from the subject, wherein the gene product is an mRNA of a gene selected from the group consisting of macrophage inflammatory protein-2β (GRO3), neutrophil lipocalin (HNL), elastase specific inhibitor (elafin), and type VI collagen α3 chain (COL6A3); and a substrate to which the nucleic acid probes are bound, wherein a difference in the expression level of the gene product in the subject compared to an expression level of the gene product in a healthy subject indicates that the subject has IBD or is at risk of developing IBD.

Applicant believes that newly added claim 27 finds clear support in the specification as filed. For example, the specification discloses that the arrays of the present invention comprise nucleic acid probes for determining the expression level of at least one IBD gene product and a substrate to which the nucleic acid probes are bound (*see,* page 5, lines 28-33). The specification also discloses that the expression level of an IBD gene product is determined in a sample (*see,* page 5, lines 13-15). In particular, the sample is obtained from a subject and the expression level of the gene product (*i.e.,* the mRNA level) is determined and compared to the level of the gene product in a healthy subject (*see,* page 76, lines 19-22). A difference in the expression level of the gene product (*i.e.,* an abnormal mRNA level) indicates that the subject has IBD or is at risk of developing IBD (*see,* page 76, lines 23-25).

Table 1 describes a list of the genes identified by Applicant whose gene products display differential expression in UC or CD relative to control samples. In particular, Table 1 shows that the macrophage inflammatory protein-2β (GRO3) gene product is overexpressed by 3.4-fold in UC relative to control samples (*see,* page 93, class I). Table 1 also provides the nucleotide sequence of this gene product, which is obtained by entering its GenBank accession number (X53800) into the National Center for Biotechnology Information (NCBI) online database (http://www.ncbi.nlm.nih.gov/). For the Examiner's convenience, Applicant has enclosed a copy of the nucleotide sequence of this gene product.

Similarly, Table 1 shows that the neutrophil lipocalin (HNL) gene product is overexpressed by 35.5-fold in UC relative to control samples (*see,* page 94, class II). Table 1 also provides the nucleotide sequence of this gene product, which is obtained by entering its

GenBank accession number (S75256) into the NCBI online database. For the Examiner's convenience, Applicant has enclosed a copy of the nucleotide sequence of this gene product.

Likewise, Table 1 shows that the elastase specific inhibitor (elafin) gene product is overexpressed by 13.3-fold in UC and 3.8-fold in CD relative to control samples (*see,* page 97, class VII). Table 1 also provides the nucleotide sequence of this gene product, which is obtained by entering its GenBank accession number (L10343) into the NCBI online database. For the Examiner's convenience, Applicant has enclosed a copy of the nucleotide sequence of this gene product.

Finally, Table 1 shows that the type VI collagen α3 chain (COL6A3) gene product is overexpressed by 7.3-fold in UC relative to control samples (*see,* page 97, class VII). Table 1 also provides the nucleotide sequence of this gene product, which is obtained by entering its GenBank accession number (X52022) into the NCBI online database. For the Examiner's convenience, Applicant has enclosed a copy of the nucleotide sequence of this gene product.

In view of the foregoing, Applicant believes that new claim 27 is adequately disclosed in the specification as filed.

III. REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 14-15 and 19-26 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In response, Applicant has canceled claims 14-15 and 19-26 without prejudice, thereby rendering this rejection moot. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

IV. REJECTION UNDER 35 U.S.C. § 102(b)

Claim 14 was rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Heller *et al.* (*Proc. Natl. Acad. Sci. USA*, 94:2150-2155 (1997)). Applicant has canceled claim 14 without prejudice, thereby rendering this rejection moot. Thus, Applicant respectfully requests that this rejection be withdrawn.

Applicant asserts that newly added claim 27 is novel over Heller *et al.* In particular, Heller *et al.* simply fails to teach or suggest an array that includes nucleic acid probes

for determining the expression level of any of the claimed genes (*i.e.*, GRO3, HNL, elafin, or COL6A3). Importantly, Heller *et al.* does not teach or suggest that these genes are differentially expressed in IBD relative to control samples. Rather, Heller *et al.* discloses the differential expression of genes from rheumatoid arthritis and IBD samples that do not correspond to any of the claimed genes. As a result, given the absence of any teaching or suggestion in Heller *et al.* that the claimed genes are differentially expressed in IBD relative to control samples, the array of Heller *et al.* would not read on the claimed array. Accordingly, each and every element as set forth in new claim 27 is not found in Heller *et al.*

V. REJECTION UNDER 35 U.S.C. § 103(a)

Claims 14-15 and 19-26 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Heller *et al.* in view of Silverman *et al.* (U.S. Patent No. 6,331,396), Poulakkainen *et al.* (*Gastroenterology*, 114:A1064 (1998)), Prehn *et al.* (*Gastroenterology*, 114:A1064 (1998)), Dieckgraefe *et al.* (*Gastroenterology*, 114:A964-965 (1998)), Dieckgraefe (U.S. Patent No. 6,228,585), and Pallone *et al.* (*Clin. Exp. Immunol.*, 74:75-79 (1988)), and further in view of the specification. Applicant has canceled claims 14-15 and 19-26 without prejudice, thereby rendering this rejection moot. Thus, Applicant respectfully requests that this rejection be withdrawn.

Applicant asserts that newly added claim 27 is unobvious over the above references either alone or in combination. As described above, Heller *et al.* not only fails to teach or suggest an array that includes nucleic acid probes for determining the expression level of any of the claimed genes (*i.e.*, GRO3, HNL, elafin, or COL6A3), but also fails to disclose that these genes are differentially expressed in IBD relative to control samples. Similarly, none of the other references teach or suggest these inventive features of the claimed array. Rather, Silverman *et al.* discloses an array with nucleic acid probes that hybridize to interferon stimulated or repressed transcripts; Puolakkainen *et al.* discloses the differential expression of stromelysin-2 (MMP-10), collagenase-3 (MMP-13), macrophage metalloelastase (MMP-12), and TIMP-3 in intestinal ulcerations using *in situ* hybridization and immunohistochemistry; Prehn *et al.* discloses that IL-18, IL-12, IL-10, and IL-4 protein levels as determined by an immunoassay

(*i.e.*, ELISA) remained unchanged in cells that were treated with TNF-α; Dieckgraefe *et al.* discloses an oligonucleotide probe array that detected changes in the expression of genes in IBD specimens, without reference to any specific genes; Dieckgraefe discloses an oligonucleotide probe array that detected changes in the expression of pancreatic stone protein (PSP), pancreatitis-associated protein (PAP), and regenerating gene homologue (REGH); and Pallone *et al.* discloses the differential expression of HLA-DR, HLA-DP, and HLA-DQ in IBD using a panel of monoclonal antibodies. As a result, given the absence of any teaching or suggestion in these references that the claimed genes are differentially expressed in IBD relative to control samples, none of these references, either alone or in combination, would read on the claimed array.

In the Office Action, the Examiner alleges that the genes listed in Table 1 of the instant specification are known to be involved in IBD (*see,* page 13 of the Office Action). In response, Applicant asserts that the Examiner has improperly characterized these genes as being known for their role in IBD. With regard to new claim 27, Applicant submits that although the specifically claimed genes were known in the art, their involvement in IBD was never appreciated. In fact, the instant specification is the first to show that GRO3, HNL, elafin, and COL6A3 are differentially expressed (*i.e.,* overexpressed) in UC and/or CD relative to control samples. As a result, contrary to the Examiner's allegation, a skilled person in the art would not have been motivated to include any of the claimed genes on an array for diagnosing IBD because it was not appreciated that detecting these genes would lead to an improved diagnosis of IBD. Therefore, Applicant believes that new claim 27 would not be rendered obvious by the instant specification, alone or in combination with any of the above references.

VI. REJECTION UNDER 35 U.S.C. § 102(b)/103(a)

Claims 14-15 and 19-26 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over Dieckgraefe *et al.* (*Gastroenterology*, 114:A964-965 (1998)). Applicant has canceled claims 14-15 and 19-26 without prejudice, thereby rendering this rejection moot. Thus, Applicant respectfully requests that this rejection be withdrawn.

Applicant asserts that newly added claim 27 is novel and unobvious over Dieckgraefe *et al.* As described above, Dieckgraefe *et al.* simply fails to teach or suggest an array that includes nucleic acid probes for determining the expression level of any of the claimed genes (*i.e.*, GRO3, HNL, elafin, or COL6A3). Importantly, Dieckgraefe *et al.* does not teach or suggest that these genes are differentially expressed in IBD relative to control samples. Rather, Dieckgraefe *et al.* discloses an oligonucleotide probe array that detected changes in the gene expression of different classes of genes in IBD specimens, without reference to any particular genes in those classes. As a result, contrary to the Examiner's allegation, the claimed array is not the same or an obvious variation of the array of Dieckgraefe *et al.* due to the fact that this reference lacks any teaching or suggestion that the claimed genes are differentially expressed in IBD relative to control samples. Even assuming *arguendo* that nucleic acid probes for the claimed genes were present on the array of Dieckgraefe *et al.*, that array would still not read on the claimed array because Dieckgraefe *et al.* fails to appreciate an array that can be used to diagnose IBD by determining the differential expression of at least one of the claimed genes. Accordingly, each and every element as set forth in new claim 27 is not found in Dieckgraefe *et al.*, and the claimed array would not be rendered obvious by this reference.

VII. REJECTION UNDER 35 U.S.C. § 102(a) or (e)/103(a)

Claims 14-15 and 19-26 were rejected under 35 U.S.C. § 102(a) or (e) as allegedly being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over Dieckgraefe (U.S. Patent No. 6,228,585). Applicant has canceled claims 14-15 and 19-26 without prejudice, thereby rendering this rejection moot. Thus, Applicant respectfully requests that this rejection be withdrawn.

Applicant asserts that newly added claim 27 is novel and unobvious over Dieckgraefe. As described above, Dieckgraefe simply fails to teach or suggest an array that includes nucleic acid probes for determining the expression level of any of the claimed genes (*i.e.*, GRO3, HNL, elafin, or COL6A3). Importantly, Dieckgraefe does not teach or suggest that these genes are differentially expressed in IBD relative to control samples. Rather, Dieckgraefe discloses an oligonucleotide probe array that detected changes in the expression of PSP, PAP,

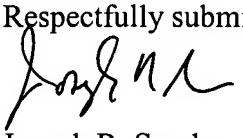
and REGH. As a result, contrary to the Examiner's allegation, the claimed array is not the same or an obvious variation of the array of Dieckgraefe due to the fact that this reference lacks any teaching or suggestion that the claimed genes are differentially expressed in IBD relative to control samples. Even assuming *arguendo* that nucleic acid probes for the claimed genes were present on the array of Dieckgraefe, that array would still not read on the claimed array because Dieckgraefe fails to appreciate an array that can be used to diagnose IBD by determining the differential expression of at least one of the claimed genes. Accordingly, each and every element as set forth in new claim 27 is not found in Dieckgraefe, and the claimed array would not be rendered obvious by this reference.

VIII. CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,



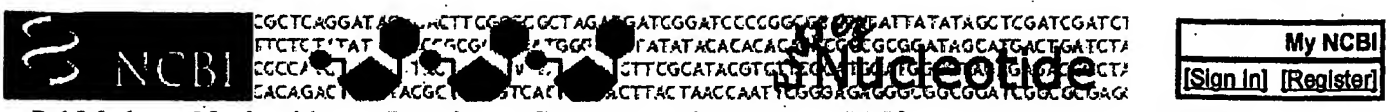
Joseph R. Snyder
Reg. No. 39,381

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 925-472-5000
Fax: 415-576-0300
Attachments
JS:jch
60656122 v1

1: X53800. Reports Human mRNA for ma...[gi:34662] Links

```
LOCUS       HSMIP2B                  988 bp    mRNA    linear   PRI 18-APR-2005
DEFINITION  Human mRNA for macrophage inflammatory protein-2beta (MIP2beta).
ACCESSION   X53800
VERSION     X53800.1  GI:34662
KEYWORDS    macrophage inflammatory protein.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
            Hominidae; Homo.
REFERENCE   1  (bases 1 to 988)
  AUTHORS   Tekamp-Olson,P., Gallegos,C., Bauer,D., McClain,J., Sherry,B.,
            Fabre,M., van Deventer,S. and Cerami,A.
  TITLE     Cloning and characterization of cDNAs for murine macrophage
            inflammatory protein 2 and its human homologues
  JOURNAL   J. Exp. Med. 172 (3), 911-919 (1990)
   PUBMED   2201751
REFERENCE   2  (bases 1 to 988)
  AUTHORS   Tekamp-Olson,P.A.
  TITLE     Direct Submission
  JOURNAL   Submitted (11-JUL-1990) Tekamp-Olson P.A., Chiron Corporation, 4560
            Horton St., Emeryville, CA 94608, USA
COMMENT     *source: 10; clone=hmip2-4a (hmip2-7d); tissue=histiocytic lymphoma
            Data kindly reviewed (07-JAN-1991) by Tekamp-Olson P.
FEATURES             Location/Qualifiers
     source          1..988
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /cell_line="U937"
                     /cell_type="monocyte"
                     /clone_lib="lambda"
     CDS             35..358
                     /note="unnamed protein product; macrophage inflammatory
                     protein-2beta precursor"
                     /codon_start=1
                     /protein_id="CAA37809.1"
                     /db_xref="GI:34663"
                     /db_xref="GOA:P19876"
                     /db_xref="InterPro:IPR001089"
                     /db_xref="InterPro:IPR001811"
                     /db_xref="InterPro:IPR002473"
                     /db_xref="UniProtKB/Swiss-Prot:P19876"
                     /translation="MAHATLSAAPSNPRLLRVALLLLLLVAASRRAAGASVVTELRCQ
                     CLQTLQGIHLKNIQSVNVRSPGPHCAQTEVIATLKNGKKACLNPASPMVQKIIEKILN
                     KGSTN"
     sig_peptide     35..136
                     /note="signal peptide"
     mat_peptide     137..355
```

```
                     /product="mature macrophage inflammatory protein-2beta"
ORIGIN
        1 ctcgcacagc ttcccgacgc gtctgctgag ccccatggcc cacgccacgc tctccgccgc
       61 ccccagcaat ccccggctcc tgcgggtggc gctgctgctc ctgctcctgg tggccgccag
      121 ccggcgcgca gcaggagcgt ccgtggtcac tgaactgcgc tgccagtgct tgcagacact
      181 gcagggaatt cacctcaaga acatccaaag tgtgaatgta aggtcccccg gaccccactg
      241 cgcccaaacc gaagtcatag ccacactcaa gaatgggaag aaagcttgtc tcaaccccgc
      301 atcccccatg gttcagaaaa tcatcgaaaa gatactgaac aaggggagca ccaactgaca
      361 ggagagaagt aagaagctta tcagcgtatc attgacactt cctgcagggt ggtccctgcc
      421 cttaccagag ctgaaaatga aaaagagaac agcagctttc tagggacagc tggaaaggac
      481 ttaatgtgtt tgactatttc ttacgagggt tctacttatt tatgtattta tttttgaaag
      541 cttgtatttt aatattttac atgctgttat ttaaagatgt gagtgtgttt catcaaacat
      601 agctcagtcc tgattattta attggaatat gatgggtttt aaatgtgtca ttaaactaat
      661 atttagtggg agaccataat gtgtcagcca ccttgataaa tgacagggtg gggaactgga
      721 gggtgggggg attgaaatgc aagcaattag tggatcactg ttagggtaag ggaatgtatg
      781 tacacatcta ttttttatac ttttttttta aaaaaagaat gtcagttgtt atttattcaa
      841 attatctcac attatgtgtt caacattttt atgctgaagt ttcccttaga cattttatgt
      901 cttgcttgta gggcataatg ccttgtttaa tgtccattct gcagcgtttc tctttccctt
      961 ggaaaagaga atttatcatt actgttac
//
```




```
LOCUS       S75256                  534 bp    mRNA    linear   PRI 27-MAY-1995
DEFINITION  HNL=neutrophil lipocalin [human, ovarian cancer cell line OC6, mRNA
            Partial, 534 nt].
ACCESSION   S75256
VERSION     S75256.1  GI:833997
KEYWORDS    .
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
            Hominidae; Homo.
REFERENCE   1  (bases 1 to 534)
  AUTHORS   Bartsch,S. and Tschesche,H.
  TITLE     Cloning and expression of human neutrophil lipocalin cDNA derived
            from bone marrow and ovarian cancer cells
  JOURNAL   FEBS Lett. 357 (3), 255-259 (1995)
   PUBMED   7835423
  REMARK    GenBank staff at the National Library of Medicine created this
            entry [NCBI gibbsq 159916] from the original journal article.
FEATURES             Location/Qualifiers
     source          1..534
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
     gene            1..534
                     /gene="HNL"
                     /note="neutrophil lipocalin"
     CDS             1..534
                     /gene="HNL"
                     /note="neutrophil lipocalin"
                     /codon_start=1
                     /protein_id="AAD14168.1"
                     /db_xref="GI:4261868"
                     /translation="QDSTSDLIPAPPLSKVPLQQNFQDNQFQGKWYVVGLAGNAILRE
                     DKDPQKMYATIYELKEDKSYNVTSVLFRKKKCDYWIRTFVPGCQPGEFTLGNIKSYPG
                     LTSYLVRVVSTNYNQHAMVFFKKVSQNREYFKITLYGRTKELTSELKENFIRFSKSLG
                     LPENHIVFPVPIDQCIDG"
ORIGIN
        1 caggactcga cgtcggacct gatcccggcc ccacctctga gcaaggtccc tctgcagcag
       61 aacttccagg acaaccaatt ccaggggaag tggtatgtgg taggcctggc agggaatgca
      121 attctcagag aagacaaaga cccgcaaaag atgtatgcca ccatctatga gctgaaagaa
      181 gacaagagct acaatgtcac ctccgtcctg tttaggaaaa agaagtgtga ctactggatc
      241 aggacttttg ttccaggttg ccagcccggc gagttcacgc tgggcaacat taagagttac
      301 cctggattaa cgagttacct cgtccgagtg gtgagcacca actacaacca gcatgctatg
      361 gtgttcttca agaaagtttc tcaaaacagg gagtacttca agatcacgct ctacgggaga
      421 accaaggagc tgacttcgga actaaaggag aacttcatcc gcttctccaa atctctgggc
      481 ctccctgaaa accacatcgt cttccccgtc cccatcgatc aatgcatcga cggc
//
```

Oct 4 2005 13:52:42


```
LOCUS       HUMPREELAS              2309 bp    DNA     linear   PRI 11-FEB-2002
DEFINITION  Homo sapiens elafin precursor, gene, complete cds.
ACCESSION   L10343
VERSION     L10343.1  GI:190337
KEYWORDS    .
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
            Hominidae; Homo.
REFERENCE   1  (bases 1 to 2309)
  AUTHORS   Sallenave,J.M. and Silva,A.
  TITLE     Characterization and gene sequence of the precursor of elafin, an
            elastase-specific inhibitor in bronchial secretions
  JOURNAL   Am. J. Respir. Cell Mol. Biol. 8 (4), 439-445 (1993)
   PUBMED   8476637
FEATURES             Location/Qualifiers
     source          1..2309
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
                     /tissue_type="placenta"
                     /tissue_lib="EMBL-3 (from Clontech)"
     exon            1..595
                     /number=1
     CAAT_signal     398..401
     CDS             join(517..595,1453..1727)
                     /function="elastase-specific proteinase inhibitor"
                     /note="elafin has been sequenced at the protein level;
                     pre-elafin has not; its existence is assumed from its
                     molecular weight (PAGE analysis); putative"
                     /codon_start=1
                     /product="elafin precursor"
                     /protein_id="AAA36483.1"
                     /db_xref="GI:190338"
                     /translation="MRASSFLIVVVFLIAGTLVLEAAVTGVPVKGQDTVKGRVPFNGQ
                     DPVKGQVSVKGQDKVKAQEPVKGPVSTKPGSCPIILIRCAMLNPPNRCLKDTDCPGIK
                     KCCEGSCGMACFVPQ"
     mat_peptide     1554..1724
                     /product="elafin"
     intron          596..1452
                     /number=1
     exon            1453..1728
                     /number=2
     intron          1729..1961
                     /number=2
     exon            1962..2119
                     /number=3
     polyA_signal    2114..2119
```

ORIGIN

```
        1 tttgtcttca agagtttttc gagaccaggg aagaaggaag gaaatgccca gtttgatcgt
       61 gggagtggta aaatgataaa gtagatctgg gtggggtttg tagcaccaga gcataatgga
      121 gaaacacctt ggttttgtaa tcaagactgg atctaccagt gacttgctga ataacttcgg
      181 tgattccttt ctcttcttgg gtctcactgt atttcaaaac atgaagaatt tcattgtaat
      241 gttacctaat aagtgagcca gcacttctac tctgtgagaa agtaggaaaa ctcttgggac
      301 aatcagagat gatgtgatgt aatgtccatt agttcttcct gtgaataatc ctgagggaaa
      361 gcccccaggt ccctcccaga atggggtgga tatttcccaa tacagctaag gaattatccc
      421 ttgtaaatac cacagacccg ccctggagcc aggccaagct ggactgcata aagattggta
      481 tggccttagc tcttagccaa acaccttcct gacaccatga gggccagcag cttcttgatc
      541 gtggtggtgt tcctcatcgc tgggacgctg gttctagagg cagctgtcac gggaggtgag
      601 tgaacaggtg acctgctggg ctgggttgga ctaaggggag accctctgga caccctgggc
      661 caggacaggg agcactactg aagcagtagg cagcactgga gcccagattt cagctttctg
      721 ttctttgcca tcatattcag aaaaaatagg actttggctg gtggactcca cgtgctttcc
      781 acctcagtga ctgagatatc aggactgttt gtggaagtaa tgttggtatg tggccttggc
      841 ctcagatgtc aatacctgtg cagaatgtgc aataaaataa tgaactccag gattttaaac
      901 cttgggtgtg gacacagtcc ccgtttctct gccccataaa agcactggag taatcagtac
      961 tctaaaagga ggttaagaaa caacaagcct tcaggaatca tgttgtttga ggacccccat
     1021 tttataagga gggaaccaaa aatgtagaaa tgagtgagca attgccaagg taattcccag
     1081 agccaggatg gggctcaagt ctcctagtat gtggctcagg gttctttcct actccaatgc
     1141 acttcctaac aaatgacaat gtgtcctctt cactgctggg tgtcacccca gtctgaccac
     1201 tgctcctgag agacttggag tggaggaagg gggaagaaac aaatactcaa gggaactctg
     1261 gtcctgtaga ccaccccaaa aaaggaagag ccttccaaga gtgtagctcc cagaggtgta
     1321 ccttccctac tcaggccatg gtttgaggat gctgcagtaa gcagtggatg gacccagacc
     1381 cagaggaaag acatggcagc tgaagcagag gcttactggg tataaatgtg ggctcgtttc
     1441 ttcttttaac agttcctgtt aaaggtcaag acactgtcaa aggccgtgtt ccattcaatg
     1501 gacaagatcc cgttaaagga caagtttcag ttaaaggtca agataaagtc aaagcgcaag
     1561 agccagtcaa aggtccagtc tccactaagc ctggctcctg ccccattatc ttgatccggt
     1621 gcgccatgtt gaatcccccc aaccgctgct tgaaagatac tgactgccca ggaatcaaga
     1681 agtgctgtga aggctcttgc gggatggcct gtttcgttcc ccagtgaggt gagcactagc
     1741 tggagaacga ggagacccct gaagacacaa aagaaggctg agcggtgggg aagcatccca
     1801 ggttggtggg agggaggttg tgggaggtga cagaaagact gggagactga ggggtctgag
     1861 aggctataac cagagtgcct agaaggatga tctgtcttcc tcactgcctc tgagtgcttt
     1921 gatgtgctga ctctcacctc tgatactctt ctcttccaca gagggagccg gtccttgctg
     1981 cacctgtgcc gtccccagag ctacaggccc catctggtcc taagtccctg ctgcccttcc
     2041 ccttcccaca ctgtccattc ttcctcccat tcaggatgcc cacggctgga gctgcctctc
     2101 tcatccactt tccaataaag acttccttct gctccacttg tttctggttc ctatgacttc
     2161 tgggctcctg gatgctttgg ggaaatggat gtagaattgg gacttcttct ctccagtgaa
     2221 gaggggaaac ggtcccatgg tgaaagagag caggnnggag gaaacaagga ggcacatgct
     2281 agggcttcat attacaatcc aataatcag
//
```

1: X52022. Reports H.sapiens RNA for...[gi:3127925] Links

```
LOCUS       HSCOLLVI3              10558 bp    mRNA    linear   PRI 09-MAY-1998
DEFINITION  H.sapiens RNA for type VI collagen alpha3 chain.
ACCESSION   X52022
VERSION     X52022.1  GI:3127925
KEYWORDS    alternate splicing; COL6A3 gene; collagen alpha 3 type VI.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
            Hominidae; Homo.
REFERENCE   1  (bases 1 to 9930)
  AUTHORS   Chu,M.L., Zhang,R.Z., Pan,T.C., Stokes,D., Conway,D., Kuo,H.J.,
            Glanville,R., Mayer,U., Mann,K., Deutzmann,R. and Timpl,R.
  TITLE     Mosaic structure of globular domains in the human type VI collagen
            alpha 3 chain: similarity to von Willebrand factor, fibronectin,
            actin, salivary proteins and aprotinin type protease inhibitors
  JOURNAL   EMBO J. 9 (2), 385-393 (1990)
   PUBMED   1689238
REFERENCE   2
  AUTHORS   Chu,M.L.
  TITLE     Direct Submission
  JOURNAL   Submitted (18-SEP-1997) Chu, M.L. Thomas Jefferson University, Dept
            of Biochemistry & Molec Biology, 233 South 10th Street,
            Philadelphia, PA 19107, USA
  REMARK    revised by author 30-SEP-97 and [3]
REFERENCE   3  (bases 1 to 10558)
  AUTHORS   Chu,M.L.
  TITLE     Direct Submission
  JOURNAL   Submitted (08-MAY-1998) Chu, M.L. Thomas Jefferson University, Dept
            of Biochemistry & Molec Biology, 233 South 10th Street,
            Philadelphia, PA 19107, USA
COMMENT     On May 12, 1998 this sequence version replaced gi:2462471.
FEATURES             Location/Qualifiers
     source          1..10558
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
     gene            1..10558
                     /gene="COL6A3"
     CDS             256..9786
                     /gene="COL6A3"
                     /codon_start=1
                     /product="collagen type VI, alpha 3 chain"
                     /protein_id="CAA36267.1"
                     /db_xref="GI:3127926"
                     /db_xref="GOA:P12111"
                     /db_xref="UniProtKB/Swiss-Prot:P12111"
                     /translation="MRKHRHLPLVAVFCLFLSGFPTTHAQQQQADVKNGAAADIIFLV
                     DSSWTIGEEHFQLVREFLYDVVKSLAVGENDFHFALVQFNGNPHTEFLLNTYRTKQEV
```

LSHISNMSYIGGTNQTGKGLEYIMQSHLTKAAGSRAGDGVPQVIVVLTDGHSKDGLAL
PSAELKSADVNVFAIGVEDADEGALKEIASEPLNMHMFNLENFTSLHDIVGNLVSCVH
SSVSPERAGDTETLKDITAQDSADIIFLIDGSNNTGSVNFAVILDFLVNLLEKLPIGT
QQIRVGVVQFSDEPRTMFSLDTYSTKAQVLGAVKALGFAGGELANIGLALDFVVENHF
TRAGGSRVEEGVPQVLVLISAGPSSDEIRYGVVALKQASVFSFGLGAQAASRAELQHI
ATDDNLVFTVPEFRSFGDLQEKLLPYIVGVAQRHIVLKPPTIVTQVIEVNKRDIVFLV
DGSSALGLANFNAIRDFIAKVIQRLEIGQDLIQVAVAQYADTVRPEFYFNTHPTKREV
ITAVRKMKPLDGSALYTGSALDFVRNNLFTSSAGYRAAEGIPKLLVLITGGKSLDEIS
QPAQELKRSSIMAFAIGNKGADQAELEEIAFDSSLVFIPAEFRAAPLQGMLPGLLAPL
RTLSGTPEVHSNKRDIIFLLDGSANVGKTNFPYVRDFVMNLVNSLDIGNDNIRVGLVQ
FSDTPVTEFSLNTYQTKSDILGHLRQLQLQGGSGLNTGSALSYVYANHFTEAGGSRIR
EHVPQLLLLLTAGQSEDSYLQAANALTRAGILTFCVGASQANKAELEQIAFNPSLVYL
MDDFSSLPALPQQLIQPLTTYVSGGVEEVPLAQPESKRDILFLFDGSANLVGQFPVVR
DFLYKIIDELNVKPEGTRIAVAQYSDDVKVESRFDEHQSKPEILNLVKRMKIKTGKAL
NLGYALDYAQRYIFVKSAGSRIEDGVLQFLVLLVAGRSSDRVDGPASNLKQSGVVPFI
FQAKNADPAELEQIVLSPAFILAAESLPKIGDLHPQIVNLLKSVHNGAPAPVSGEKDV
VFLLDGSEGVRSGFPLLKEFVQRVVESLDVGQDRVRVAVVQYSDRTRPEFYLNSYMNK
QDVVNAVRQLTLLGGPTPNTGAALEFVLRNILVSSAGSRITEGVPQLLIVLTADRSGD
DVRNPSVVVKRGGAVPIGIGIGNADITEMQTISFIPDFAVAIPTFRQLGTVQQVISER
VTQLTREELSRLQPVLQPLPSPGVGGKRDVVFLIDGSQSAGPEFQYVRTLIERLVDYL
DVGFDTTRVAVIQFSDDPKAEFLLNAHSSKDEVQNAVQRLRPKGGRQINVGNALEYVS
RNIFKRPLGSRIEEGVPQFLVLISSGKSDDEVVVPAVELKQFGVAPFTIARNADQEEL
VKISLSPEYVFSVSTFRELPSLEQKLLTPITTLTSEQIQKLLASTRYPPPAVESDAAD
IVFLIDSSEGVRPDGFAHIRDFVSRIVRRLNIGPSKVRVGVVQFSNDVFPEFYLKTYR
SQAPVLDAIRRLRLRGGSPLNTGKALEFVARNLFVKSAGSRIEDGVPQHLVLVLGGKS
QDDVSRFAQVIRSSGIVSLGVGDRNIDRTELQTITNDPRLVFTVREFRELPNIEERIM
NSFGPSAATPAPPGVDTPPPSRPEKKKADIVFLLDGSINFRRDSFQEVLRFVSEIVDT
VYEDGDSIQVGLVQYNSDPTDEFFLKDFSTKRQIIDAINKVVYKGGRHANTKVGLEHL
RVNHFVPEAGSRLDQRVPQIAFVITGGKSVEDAQDVSLALTQRGVKVFAVGVRNIDSE
EVGKIASNSATAFRVGNVQELSELSEQVLETLHDAMHETLCPGVTDAAKACNLDVILG
FDGSRDQNVFVAQKGFESKVDAILNRISQMHRVSCSGGRSPTVRVSVVANTPSGPVEA
FDFDEYQPEMLEKFRNMRSQHPYVLTEDTLKVYLNKFRQSSPDSVKVVIHFTDGADGD
LADLHRASENLRQEGVRALILVGLERVVNLERLMHLEFGRGFMYDRPLRLNLLDLDYE
LAEQLDNIAEKACCGVPCKCSGQRGDRGPIGSIGPKGIPGEDGYRGYPGDEGGPGERG
PPGVNGTQGFQGCPGQRGVKGSRGFPGEKGEVGEIGLDGLDGEDGDKGLPGSSGEKGN
PGRRGDKGPRGEKGERGDVGIRGDPGNPGQDSQERGPKGETGDLGPMGVPGRDGVPGG
PGETGKNGGFGRRGPPGAKGNKGGPGQPGFEGEQGTRGAQGPAGPAGPPGLIGEQGIS
GPRGSGGARGAPGERGRTGPLGRKGEPGEPGPKGGIGNPGPRGETGDDGRDGVGSEGR
RGKKGERGFPGYPGPKGNPGEPGLNGTTGPKGIRGRRGNSGPPGIVGQKGRPGYPGPA
GPRGNRGDSIDQCALIQSIKDKCPCCYGPLECPVFPTELAFALDTSEGVNQDTFGRMR
DVVLSIVNVLTIAESNCPTGARVAVVTYNNEVTTEIRFADSKRKSVLLDKIKNLQVAL
TSKQQSLETAMSFVARNTFKRVRNGFLMRKVAVFFSNTPTRASPQLREAVLKLSDAGI
TPLFLTRQEDRQLINALQINNTAVGHALVLPAGRDLTDFLENVLTCHVCLDICNIDPS
CGFGSWRPSFRDRRAAGSDVDIDMAFILDSAETTTLFQFNEMKKYIAYLVRQLDMSPD
PKASQHFARVAVVQHAPSESVDNASMPPVKVEFSLTDYGSKEKLVDFLSRGMTQLQGT
RALGSAIEYTIENVFESAPNPRDLKIVVLMLTGEVPEQQLEEAQRVILQAKCKGYFFV
VLGIGRKVNIKEVYTFASEPNDVFFKLVDKSTELNEEPLMRFGRLLPSFVSSENAFYL
SPDIRKQCDWFQGDQPTKNLVKFGHKQVNVPNNVTSSPTSNPVTTTKPVTTTKPVTTT
TKPVTTTTKPVTIINQPSVKPAAAKPAPAKPVAAKPVATKTATVRPPVAVKPATAAKP
VAAKPAAVRPPAAAAKPVATKPEVPRPQAAKPAATKPATTKPVVKMLREVQVFEITEN
SAKLHWERPEPPGPYFYDLTVTSAHDQSLVLKQNLTVTDRVIGGLLAGQTYHVAVVCY
LRSQVRATYHGSFSTKKSQPPPPQPARSASSSTINLMVSTEPLALTETDICKLPKDEG
TCRDFILKWYYDPNTKSCARFWYGGCGGNENKFGSQKECEKVCAPVLAKPGVISVMGT
"

misc_feature 347..964
/gene="COL6A3"
/note="alternatively spliced domain
domain N10"

misc_feature 965..1567
/gene="COL6A3"
/note="alternatively spliced domain
domain N9"

misc_feature 2153..2752

```
                     /gene="COL6A3"
                     /note="alternatively spliced domain
                     domain N7"
     misc_feature    4541..5041
                     /gene="COL6A3"
                     /note="alternatively spliced domain
                     domain N3"
ORIGIN
        1 cagtttggag ctcagtcttc caccaaaggc cgttcagttc tcctgggctc cagcctcctg
       61 caaggactgc aagagttttc ctccgcagct ctgagtctcc actttttttgg tggagaaagg
      121 ctgcaaaaag aaaaagagac gcagtgagtg ggaaaagtat gcatcctatt caaacctaat
      181 tgaatcgagg agcccaggga cacacgcctt caggtttgct caggggttca tatttggtgc
      241 ttagacaaat tcaaaatgag gaaacatcgg cacttgccct tagtggccgt cttttgcctc
      301 tttctctcag gctttcctac aactcatgcc cagcagcagc aagcagatgt caaaaatggt
      361 gcggctgctg atataatatt tctagtggat tcctcttgga ccattggaga ggaacatttc
      421 caacttgttc gagagtttct atatgatgtt gtaaaatcct tagctgtggg agaaaatgat
      481 ttccattttg ctctggtcca gttcaacgga aacccacata ccgagttcct gttaaatacg
      541 tatcgtacta aacaagaagt cctttctcat atttccaaca tgtcttatat tgggggaacc
      601 aatcagactg gaaaaggatt agaatacata atgcaaagcc acctcaccaa ggctgctgga
      661 agccgggccg gtgacggagt ccctcaggtt atcgtagtgt taactgatgg acactcgaag
      721 gatggccttg ctctgccctc agcggaactt aagtctgctg atgttaacgt gtttgcaatt
      781 ggagttgagg atgcagatga aggagcgtta aaagaaatag caagtgaacc gctcaatatg
      841 catatgttca acctagagaa ttttacctca cttcatgaca tagtaggaaa cttagtgtcc
      901 tgtgtgcatt catccgtgag tccagaaagg gctggggaca cggaaaccct taaagacatc
      961 acagcacaag actctgctga cattattttc cttattgatg gatcaaacaa caccggaagt
     1021 gtcaatttcg cagtcattct cgacttcctt gtaaatctcc ttgagaaact cccaattgga
     1081 actcagcaga tccgagtggg ggtggtccag tttagcgatg agcccagaac catgttttcc
     1141 ttggacacct actccaccaa ggcccaggtt ctgggtgcag tgaaagccct cgggtttgct
     1201 ggtggggagt tggccaatat cggcctcgcc cttgatttcg tggtggagaa ccacttcacc
     1261 cgggcagggg gcagccgcgt ggaggaaggg gttccccagg tgctggtcct cataagtgcc
     1321 gggccttcta gtgacgagat tcgctacggg gtggtagcac tgaagcaggc tagcgtgttc
     1381 tcattcggcc ttggagccca ggccgcctcc agggcagagc ttcagcacat agctaccgat
     1441 gacaacttgg tgtttactgt cccggaattc cgtagctttg gggacctcca ggagaaatta
     1501 ctgccgtaca ttgttggcgt ggcccaaagg cacattgtct tgaaaccgcc aaccattgtc
     1561 acacaagtca ttgaagtcaa caagagagac atagtcttcc tggtggatgg ctcatctgca
     1621 ctgggactgg ccaacttcaa tgccatccga gacttcattg ctaaagtcat ccagaggctg
     1681 gaaatcggac aggatcttat ccaggtggca gtggcccagt atgcagacac tgtgaggcct
     1741 gaattttatt tcaataccca tccaacaaaa agggaagtca taaccgctgt gcggaaaatg
     1801 aagcccctgg acggctcggc cctgtacacg ggctctgctc tagactttgt tcgtaacaac
     1861 ctattcacga gttcagccgg ctaccgggct gccgagggga ttcctaagct tttggtgctg
     1921 atcacaggtg gtaagtccct agatgaaatc agccagcctg cccaggagct gaagagaagc
     1981 agcataatgg cctttgccat tgggaacaag ggtgccgatc aggctgagct ggaagagatc
     2041 gctttcgact cctccctggt gttcatccca gctgagttcc gagccgcccc attgcaaggc
     2101 atgctgcctg gcttgctggc acctctcagg accctctctg gaaccctga agttcactca
     2161 aacaaaagag atatcatctt tcttttggat ggatcagcca acgttggaaa aaccaatttc
     2221 ccttatgtgc gcgactttgt aatgaaccta gttaacagcc ttgatattgg aaatgacaat
     2281 attcgtgttg gtttagtgca atttagtgac actcctgtaa cggagttctc tttaaacaca
     2341 taccagacca agtcagatat ccttggtcat ctgaggcagc tgcagctcca gggaggttcg
     2401 ggcctgaaca caggctcagc cctaagctat gtctatgcca accacttcac ggaagctggc
     2461 ggcagcagga tccgtgaaca cgtgccgcag ctcctgcttc tgctcacagc tgggcagtct
     2521 gaggactcct atttgcaagc tgccaacgcc ttgacacgcg cgggcatcct gacttttttgt
     2581 gtgggagcta gccaggcgaa taaggcagag cttgagcaga ttgcttttaa cccaagcctg
     2641 gtgtatctca tggatgattt cagctccctg ccagctttgc ctcagcagct gattcagccc
     2701 ctaaccacat atgttagtgg aggtgtggag gaagtaccac tcgctcagcc agagagcaag
     2761 cgagacattc tgttcctctt tgacggctca gccaatcttg tgggccagtt ccctgttgtc
     2821 cgtgactttc tctacaagat tatcgatgag ctcaatgtga agccagaggg gacccgaatt
     2881 gcggtggctc agtacagcga tgatgtcaag gtggagtccc gttttgatga gcaccagagt
     2941 aagcctgaga tcctgaatct tgtgaagaga atgaagatca agacgggcaa agccctcaac
     3001 ctgggctacg cgctggacta tgcacagagg tacatttttg tgaagtctgc tggcagccgg
     3061 atcgaggatg gagtgcttca gttcctggtg ctgctggtcg caggaaggtc atctgaccgt
     3121 gtggatgggc cagcaagtaa cctgaagcag agtggggttg tgcctttcat cttccaagcc
     3181 aagaacgcag accctgctga gttagagcag atcgtgctgt ctccagcgtt tatcctggct
     3241 gcagagtcgc ttcccaagat tggagatctt catccacaga tagtgaatct cttaaaatca
```

```
3301 gtgcacaacg gagcaccagc accagtttca ggtgaaaagg acgtggtgtt tctgcttgat
3361 ggctctgagg gcgtcaggag cggcttccct ctgttgaaag agtttgtcca gagagtggtg
3421 gaaagcctgg atgtgggcca ggaccgggtc cgcgtggccg tggtgcagta cagcgaccgg
3481 accaggcccg agttctacct gaattcatac atgaacaagc aggacgtcgt caacgctgtc
3541 cgccagctga ccctgctggg agggccgacc cccaacaccg gggccgccct ggagtttgtc
3601 ctgaggaaca tcctggtcag ctctgcggga agcaggataa cagaaggtgt gccccagctg
3661 ctgatcgtcc tcacggccga caggtctggg gatgatgtgc ggaacccctc cgtggtcgtg
3721 aagaggggtg gggctgtgcc cattggcatt ggcatcggga acgctgacat cacagagatg
3781 cagaccatct ccttcatccc ggactttgcc gtggccattc ccacctttcg ccagctgggg
3841 accgtccaac aggtcatctc tgagagggtg acccagctca cccgcgagga gctgagcagg
3901 ctgcagccgg tgttgcagcc tctaccgagc ccaggtgttg gtggcaagag ggacgtggtc
3961 tttctcatcg atgggtccca aagtgccggg cctgagttcc agtacgttcg caccctcata
4021 gagaggctgg ttgactacct ggacgtgggc tttgacacca cccgggtggc tgtcatccag
4081 ttcagcgatg accccaaggc ggagttcctg ctgaacgccc attccagcaa ggatgaagtg
4141 cagaacgcgg tgcagcggct gaggcccaag ggagggcggc agatcaacgt gggcaatgcc
4201 ctggagtacg tgtccaggaa catcttcaag aggcccctgg ggagccgcat tgaagagggc
4261 gtcccacagt tcctggtcct catctcgtct ggaaagtctg acgatgaggt ggtcgtcccg
4321 gcggtggagc tcaagcagtt tggcgtggcc cctttcacga tcgccaggaa cgcagaccag
4381 gaggagctgg tgaagatctc gctgagcccc gaatatgtgt tctcggtgag caccttccgg
4441 gagctgccca gcctggagca gaaactgctg acgcccatca cgaccctgac ctcagagcag
4501 atccagaagc tcttagccag cactcgctat ccacctccag cagttgagag tgatgctgca
4561 gacattgtct ttctgatcga cagctctgag ggagttaggc cagatggctt tgcacatatt
4621 cgagattttg ttagcaggat tgttcgaaga ctcaacatcg gccccagtaa agtgagagtt
4681 ggggtcgtgc agttcagcaa tgatgtcttc ccagaattct atctgaaaac ctacagatcc
4741 caggccccgg tgctggacgc catacggcgc ctgaggctca gagggggtc cccactgaac
4801 actggcaagg ctctcgaatt tgtggcaaga aacctctttg ttaagtctgc ggggagtcgc
4861 atagaagacg gggtgcccca acacctggtc ctggtcctgg gtggaaaatc ccaggacgat
4921 gtgtccaggt tcgcccaggt gatccgttcc tcgggcattg tgagtttagg ggtaggagac
4981 cggaacatcg acagaacaga gctgcagacc atcaccaatg accccagact ggtcttcaca
5041 gtgcgagagt tcagagagct tcccaacata gaagaaagaa tcatgaactc gtttggaccc
5101 tccgcagcca ctcctgcacc tccaggggtg gacacccctc ctccttcacg gccagagaag
5161 aagaaagcag acattgtgtt cctgttggat ggttccatca acttcaggag ggacagtttc
5221 caggaagtgc ttcgttttgt gtctgaaata gtggacacag tttatgaaga tggcgactcc
5281 atccaagtgg ggcttgtcca gtacaactct gaccccactg acgaattctt cctgaaggac
5341 ttctctacca agaggcagat tattgacgcc atcaacaaag tggtctacaa agggggaaga
5401 cacgccaaca ctaaggtggg ccttgagcac ctgcgggtaa accactttgt gcctgaggca
5461 ggcagccgcc tggaccagcg ggtccctcag attgcctttg tgatcacggg aggaaagtcg
5521 gtggaagatg cacaggatgt gagcctggcc ctcacccaga ggggggtcaa agtgtttgct
5581 gttggagtga ggaatatcga ctcggaggag gttggaaaga tagcgtccaa cagcgccaca
5641 gcgttccgcg tgggcaacgt ccaggagctg tccgaactga gcgagcaagt tttggaaact
5701 ttgcatgatg cgatgcatga aacccttttgc cctggtgtaa ctgatgctgc caaagcttgt
5761 aatctggatg tgattctggg gtttgatggt tctagagacc agaatgtttt tgtggcccag
5821 aagggcttcg agtccaaggt ggacgccatc ttgaacagaa tcagccagat gcacagggtc
5881 agctgcagcg gtggccgctc gcccaccgtg cgtgtgtcag tggtggccaa cacgccctcg
5941 ggcccggtgg aggcctttga ctttgacgag taccagccag agatgctcga gaagttccgg
6001 aacatgcgca gccagcaccc ctacgtcctc acggaggaca ccctgaaggt ctacctgaac
6061 aagttcagac agtcctcgcc ggacagcgtg aaggtggtca ttcattttac tgatggagca
6121 gacggagatc tggctgattt acacagagca tctgagaacc tccgccaaga aggagtccgt
6181 gccttgatcc tggtgggcct tgaacgagtg gtcaacttgg agcggctaat gcatctggag
6241 tttgggcgag ggtttatgta tgacaggccc ctgaggctta acttgctgga cttggattat
6301 gaactagcgg agcagcttga caacattgcc gagaaagctt gctgtggggt tccctgcaag
6361 tgctctgggc agaggggaga ccgcgggccc atcggcagca tcgggccaaa gggtattcct
6421 ggagaagacg gctaccgagg ctatcctggt gatgagggtg gacccggtga gcgtggtccg
6481 cctggtgtga acggcactca aggtttccag ggctgcccgg gccagagagg agtaaagggc
6541 tctcggggat tcccaggaga gaagggcgaa gtaggagaaa ttggactgga tggtctggat
6601 ggtgaagatg gagacaaagg attgcctggt tcttctggag agaaagggaa tcctggaaga
6661 aggggtgata aaggacctcg aggagagaaa ggagaaagag gagatgttgg gattcgaggg
6721 gacccgggta acccaggaca agacagccag gagagaggac ccaaaggaga aaccggtgac
6781 ctcggcccca tgggtgtccc agggagagat ggagtacctg gaggacctgg agaaactggg
6841 aagaatggtg gctttggccg aaggggaccc cccggagcta agggcaacaa gggcggtcct
6901 ggccagccgg gctttgaggg agagcagggg accagaggtg cacagggccc agctggtcct
6961 gctggtcctc cagggctgat aggagaacaa ggcatttctg gacctagggg aagcggaggt
7021 gcccgtggcg ctcctggaga acgaggcaga accggtccac tgggaagaaa gggtgagccc
```

```
 7081 ggagagccag gaccaaaagg aggaatcggg aacccgggcc ctcgtgggga gacgggagat
 7141 gacgggagag acggagttgg cagtgaagga cgcagaggca aaaaaggaga aagaggattt
 7201 cctggatacc caggaccaaa gggtaaccca ggtgaacctg ggctaaatgg aacaacagga
 7261 cccaaaggca tcagaggccg aaggggaaat tcgggacctc cagggatagt tggacagaag
 7321 gggagacctg gctacccagg accagctggt ccaaggggca acaggggcga ctccatcgat
 7381 caatgtgccc tcatccaaag catcaaagat aaatgccctt gctgttacgg gcccctggag
 7441 tgccccgtct tcccaacaga actagccttt gctttagaca cctctgaggg agtcaaccaa
 7501 gacactttcg gccggatgcg agatgtggtc ttgagtattg tgaatgtcct gaccattgct
 7561 gagagcaact gcccgacggg ggcccgggtg gctgtggtca cctacaacaa cgaggtgacc
 7621 acggagatcc ggtttgctga ctccaagagg aagtcggtcc tcctggacaa gattaagaac
 7681 cttcaggtgg ctctgacatc caaacagcag agtctggaga ctgccatgtc gtttgtggcc
 7741 aggaacacat ttaagcgtgt gaggaacgga ttcctaatga ggaaagtggc tgttttcttc
 7801 agcaacacac ccacaagagc atccccacag ctcagagagg ctgtgctcaa actctcagat
 7861 gcggggatca ccccccttgtt ccttacaagg caggaagacc ggcagctcat caacgctttg
 7921 cagatcaata acacagcagt ggggcatgcg cttgtcctgc ctgcagggag agacctcaca
 7981 gacttcctgg agaatgtcct cacgtgtcat gtttgcttgg acatctgcaa catcgaccca
 8041 tcctgtggat ttggcagttg gaggccttcc ttcagggaca ggagagcggc agggagtgat
 8101 gtggacatcg acatggcttt catcttagac agcgctgaga ccaccaccct gttccagttc
 8161 aatgagatga agaagtacat agcgtacctg gtcagacaac tggacatgag cccagatccc
 8221 aaggcctccc agcacttcgc cagagtggca gttgtgcagc acgcgccctc tgagtccgtg
 8281 gacaatgcca gcatgccacc tgtgaaggtg gaattctccc tgactgacta tggctccaag
 8341 gagaagctgg tggacttcct cagcagggga atgacacagt tgcagggaac cagggcctta
 8401 ggcagtgcca ttgaatacac catagagaat gtctttgaaa gtgccccaaa cccacgggac
 8461 ctgaaaattg tggtcctgat gctgacgggc gaggtgccgg agcagcagct ggaggaggcc
 8521 cagagagtca tcctgcaggc caaatgcaag ggctacttct tcgtggtcct gggcattggc
 8581 aggaaggtga acatcaagga ggtatacacc ttcgccagtg agccaaacga cgtcttcttc
 8641 aaattagtgg acaagtccac cgagctcaac gaggagcctt tgatgcgctt cgggaggctg
 8701 ttgccgtcct tcgtcagcag tgaaaatgct ttttacttgt ccccagatat caggaaacag
 8761 tgtgattggt tccaagggga ccaacccaca aagaaccttg tgaagtttgg tcacaaacaa
 8821 gtaaatgttc cgaataacgt tacttcaagt cctacatcca acccagtgac gacaacgaag
 8881 ccggtgacta cgacgaagcc ggtgaccacc acaacaaagc ctgtaaccac cacaacaaag
 8941 cctgtgacta ttataaatca gccatctgtg aagccagccg ctgcaaagcc ggcccctgcg
 9001 aaacctgtgg ctgccaagcc tgtggccaca aagacggcca ctgttagacc cccagtggcg
 9061 gtgaagccag caacagcagc gaagcctgta gcagcaaagc cagcagctgt aagacccccc
 9121 gctgctgctg caaaaccagt ggcgaccaag cctgaggtcc ctaggccaca ggcagccaaa
 9181 ccagctgcca ccaagccagc caccactaag cccgtggtta agatgctccg tgaagtccag
 9241 gtgtttgaga taacagagaa cagcgccaaa ctccactggg agaggcctga gcccccggt
 9301 ccttattttt atgacctcac cgtcacctca gcccatgatc agtccctggt tctgaagcag
 9361 aacctcacgg tcacggaccg cgtcattgga ggcctgctcg ctgggcagac ataccatgtg
 9421 gctgtggtct gctacctgag gtctcaggtc agagccacct accacggaag tttcagtaca
 9481 aagaaatctc agcccccacc tccacagcca gcaaggtcag cttctagttc aaccatcaat
 9541 ctaatggtga gcacagaacc attggctctc actgaaacag atatatgcaa gttgccgaaa
 9601 gacgaaggaa cttgcaggga tttcatatta aaatggtact atgatccaaa caccaaaagc
 9661 tgtgcaagat tctggtatgg aggttgtggt ggaaacgaaa acaaatttgg atcacagaaa
 9721 gaatgtgaaa aggtttgcgc tcctgtgctc gccaaacccg gagtcatcag tgtgatggga
 9781 acctaagcgt gggtggccaa catcatatac ctcttgaaga agaaggagtc agccatcgcc
 9841 aacttgtctc tgtagaagct ccgggtgtag attcccttgc actgtatcat ttcatgcttt
 9901 gatttacact cgaactcggg agggaacatc ctgctgcatg acctatcagt atggtgctaa
 9961 tgtgtctgtg gaccctcgct ctctgtctcc agcagttctc tcgaatactt tgaatgttgt
10021 gtaacagtta gccactgctg gtgtttatgt gaacattcct atcaatccaa attccctctg
10081 gagtttcatg ttatgcctgt tgcaggcaaa tgtaaagtct agaaaataat gcaaatgtca
10141 cggctactct atatactttt gcttggttca ttttttttcc cttttagtta agcatgactt
10201 tagatgggaa gcctgtgtat cgtggagaaa caagagacca acttttttcat tccctgcccc
10261 caatttccca gactagattt caagctaatt ttctttttct gaagcctcta acaaatgatc
10321 tagttcagaa ggaagcaaaa tcccttaatc tatgtgcacc gttgggacca atgccttaat
10381 taaagaattt aaaaaagttg taatagagaa tatttttggc attcctctca atgttgtgtg
10441 ttttttttttt ttgtgtgctg gagggagggg atttaatttt aattttaaaa tgtttaggaa
10501 atttatacaa agaaacttttt taataaagta tattgaaagt ttaaaaaaaa aaaaaaaa
//
```

Oct 4 2005 13:52:42